

REMARKS

The Office Action of December 12, 2007 was received and carefully reviewed. Reconsideration and withdrawal of the currently pending rejections are requested for the reasons advanced in detail below.

Claims 1-12 were pending prior to the instant amendment. By this amendment, claims 1, 2 and 4 are amended and claims 3 and 5-12 have been canceled without prejudice or disclaimer. New claims 13-18 have been added. No new matter has been introduced. Consequently, claims 1, 2, 4 and 13-18 are currently pending in the instant application with claims 1, 2 and 4 being independent.

In the Office Action, claims 1-6 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Pat Pub. 2003/0127974 to Miyazawa (Miyazawa). Miyazawa, however, fails to render the claimed invention unpatentable. Each of the claims recite a specific combination of features that distinguishes the invention from the prior art in different ways. For example, independent claim 1 recites a combination that includes, among other things:

forming a layer including a photocatalytic substance over a substrate; forming a gate electrode over the layer including the photocatalytic substance ... forming a pixel electrode over the first insulating film; forming a first semiconductor layer over the first insulating film and the pixel electrode ... forming source and drain wirings over the second semiconductor layer; and etching the second semiconductor layer using the source and drain wirings as a mask, wherein at least one of the gate electrode, the pixel electrode, and the source and drain wirings is formed by a droplet discharge method.

Independent claim 2 recites yet another combination that includes, *inter alia*,

forming a layer including a photocatalytic substance over a substrate; forming a gate electrode over the layer including the photocatalytic substance ... forming source and drain wirings over the second semiconductor layer; etching the second semiconductor layer using the source and drain wirings as a mask; forming a third insulating film over the source and drain wirings and the first insulating film; forming an opening in third insulating film; and forming a pixel electrode over the third insulating film, wherein the pixel electrode is electrically connected with one of

the source and drain wirings through the opening, and wherein at least one of the gate electrode, the source and drain wirings, and the pixel electrode is formed by a droplet discharge method.

Additionally, independent claim 4 recites another combination that includes, for example,

forming a layer including a photocatalytic substance over a substrate; forming a gate electrode over the layer including the photocatalytic substance ... forming source and drain wirings over the second semiconductor layer; etching the second semiconductor layer using the source and drain wirings as a mask; and forming a third insulating film over the source and drain wirings and the pixel electrode, wherein the pixel electrode is electrically connected with one of the source and drain wirings, and wherein at least one of the gate electrode, the pixel electrode, and the source and drain wirings is formed by a droplet discharge method.

At the very least, Miyazawa fails to disclose or suggest any of these exemplary features recited in the independent claims 1, 2 and 4.

Miyazawa discloses a method for manufacturing an electro-optical device. Applicants contend that amended independent claims 1 and 4 are supported in the original specification, for example, in FIGS. 29A to 30D and in Embodiment Mode 4. Further, the present invention, as recited in the amended claims, discloses i) forming a layer including a photocatalytic substance (1101) over a substrate (100); ii) forming a gate electrode (203) over the layer including the photocatalytic substance (1101); iii) forming a first insulating film (208 or 209) to cover the gate electrode (203); iv) forming a pixel electrode (9001) over the first insulating film (208 or 209); v) forming a first semiconductor layer (9002) over the first insulating film (208 or 209) and the pixel electrode (9001); vi) forming a second insulating film (214) over the first semiconductor layer (9002) to overlap the gate electrode (203); vii) forming a second semiconductor layer (9003) to cover the second insulating film (214); viii) patterning the first (9002) and second (9003) semiconductor layers into an island shape; ix) forming source and drain wirings (9004, 9005) over the second semiconductor layer (9003); x) etching the second semiconductor layer (9003) using the source and drain wirings (9004, 9005) as a mask; and xi) forming a third insulating film (225) (which functions as an

alignment film) over the source and drain wirings (9004, 9005) and the pixel electrode (9001).

Additionally, Applicants contend that amended independent claim 2 is supported in the original specification, for example, in FIGS. 4A to 5C, 8A and 8B and in Embodiment Mode 2. To be specific, the present application discloses i) forming a layer including a photocatalytic substance (206) over a substrate (100); ii) forming a gate electrode (203) over the layer including the photocatalytic substance (206); iii) forming a first insulating film (208, 209 or 210) to cover the gate electrode (203); iv) forming a first semiconductor layer (211) over the first insulating film (208, 209 or 210); v) forming a second insulating film (212 or 214) over the first semiconductor layer (211) to overlap the gate electrode (203); vi) forming a second semiconductor layer (218) to cover the second insulating film (212 or 214); vii) patterning the first (211) and second (218) semiconductor layers into an island shape; viii) forming source and drain wirings (219, 220) over the second semiconductor layer (218); ix) etching the second semiconductor layer (218) using the source and drain wirings (219, 220) as a mask; x) forming a third insulating film (240) over the source and drain wirings (219, 220) and the first insulating film (208, 209 or 210); xi) forming an opening (241) in third insulating film (240); and xii) forming a pixel electrode (224) over the third insulating film (240).

Miyazawa fails to teach at least these features of the invention as recited in the claims. For anticipation under 35 U.S.C. § 102, the reference must teach every aspect of the claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present (M.P.E.P. 706.02). Since each and every element, as set forth in the claims are not found either expressly or inherently described as required by the M.P.E.P., Miyazawa

cannot be said to anticipate the invention as claimed. Hence, withdrawal of the rejection is respectfully requested.

In the Office Action, claims 1-12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. Pub. 2004/0004221 to Murade (Murade) and further in view of U.S. Pat Pub. 2004/0195569 to Hashimoto et al. (Hashimoto). Murade in view of Hashimoto, however, fail to render the claimed invention unpatentable. Each of the claims recite a specific combination of features that distinguishes the invention from the prior art in different ways.

In the Office Action, the Examiner asserts that Murade discloses “forming an n-type second semiconductor layer to cover the second insulating film,” “patterning the first and second semiconductor layers into an island shape,” and “etching the second semiconductor layer using the second and the third electrode as a mask to be separated.”

The Examiner attempts to remedy the deficiencies of Murade by turning to Hashimoto. Hashimoto discusses merely a base treatment such as i) liquid repellent treatment by forming a SAM film and ii) lyophilic treatment by performing ultraviolet irradiation or plasma processing with oxygen (see paragraph [0214]). However, Murade, taken in combination with Hashimoto fails to disclose or suggest the feature of forming a layer including a photocatalytic substance over a substrate, as recited in claims 1, 2 and 4. Thus, Applicants contend that it cannot be said that Murade, taken alone or in combination with Hashimoto, makes obvious the present invention, as claimed.

In accordance with the M.P.E.P. § 2143.03, to establish a *prima facie* case of obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 409 F.2d 981, 180 USPQ 580 (CCPA 1974). “All words in a claim must be considered in judging the patentability of that claim against the prior art.” *In*

re Wilson, 424 F.2d 1382, 1385, 165 USPQ 196 (CCPA 1970). Therefore, it is respectfully submitted that neither Murade nor Hashimoto, taken alone or in any proper combination, discloses or suggests the subject matter as recited in claims 1, 2 and 4. Hence, withdrawal of the rejection is respectfully requested.

Each of the dependent claims depend from one of independent claims 1, 2 or 4 and are patentable over the cited prior art for at least the same reasons as set forth above with respect to claims 1, 2 and 4.

In addition, each of the dependent claims also recite combinations that are separately patentable.

In view of the foregoing remarks, this claimed invention, as amended, is not rendered obvious in view of the prior art references cited against this application. Applicant therefore request the entry of this response, the Examiner's reconsideration and reexamination of the application, and the timely allowance of the pending claims.

In discussing the specification, claims, and drawings in this response, it is to be understood that Applicant in no way intends to limit the scope of the claims to any exemplary embodiments described in the specification and/or shown in the drawings. Rather, Applicant is entitled to have the claims interpreted broadly, to the maximum extent permitted by statute, regulation, and applicable case law.

Should the Examiner believe that a telephone conference would expedite issuance of the application, the Examiner is respectfully invited to telephone the undersigned agent at (202) 585-8100.

Respectfully submitted,

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